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ABSTRACT

This paper explores the issues related to teacher training in assessment as they manifest themselves in the Pacific Northwest. Careful analyses were conducted of state laws in Alaska, Hawaii, Idaho, Montana, Oregon, and Washington to find out what these laws require in the area of student assessment training. Assessment course offerings in the most prominent teacher training programs in the region were examined to determine how frequently teachers are offered training in assessment and exactly what they are taught. The goal of the study was to determine teacher training priorities in the Northwest and to compare those findings with the results of a decade-long study of the task demands of classroom assessment. Discrepancies between the real assessment needs of teachers and the needs addressed (or not addressed) in their training programs suggest policies in need of reexamination, certification requirements in need of review, and teacher training curricula in need of revision. (JD)

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TEACHER TRAINING IN ASSESSMENT

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Teacher Training in Assessment

The quality of classroom instruction is a function of the quality of the teacher's assessments of student achievement. It is impossible for teachers to diagnose student needs, track the pace of student learning, evaluate the impact of instruction, assign grades, communicate with parents, and/or demonstrate professional accountability for student academic growth and development without sound day to day assessments of student achievement in the classroom. Thus, the task of classroom assessment places very heavy demands on the teacher. Teachers can spend as much as a quarter to a third of available professional time involved in assessment related activities. They make decisions about how to interact with their students at the rate of one every two to three minutes on average. And over half of those decisions have as antecedents some data gathered by teachers about the achievement of their students.

Given these great demands, we would expect that a major portion of the teacher's professional preparation would be devoted to training them to meet these assessment demands. However, Schafer & Lissitz (1987) studied the course offerings in assessment of the member institutions of the American Association of Colleges of Teacher Education and found that over half require no training in assessment whatever to graduate from their programs. Further, Wolmut (see Table 1) has documented the fact that teacher certification laws typically require no such training, nor is there a trend toward increased requirements. And, in a review of the impact of the school improvement movement on educational policy, Goertz (1986) finds that, while standards in teacher certification have been effected and, specifically, some requirements for classroom skills have been expanded, there is little evidence of improvement in assessment training requirements.

Table 1
State Teacher Certification Standards
related to Assessment Training

1983		1988	
I. States with Specific Content Requirements			
AL	Evaluation of teaching/learning	AL	Evaluation of teaching/learning
IN	Educational measurement & evaluation	AZ	Assessment & evaluation
MA	Teacher can use results of various evaluation procedures to stress the effectiveness of instruction (secondary teachers)	IN	Educ. measurement & evaluation
		MA	Use results of various evaluation procedures to stress the effectiveness of instruction (all teachers)
MS	Educational research (AA, AAA and AAAA certificates	OR	Teaching strategies emphasizing developing of measurable objectives and diagnostic and prescriptive techniques
MO	Tests & measurements	TN	Measurement & evaluation
NV	Counseling & guidance, with emphasis on parent involvement	VT	Ability to select, use, and interpret formal and informal tests to identify the strengths and weaknesses of individual students
OK	Evaluation of learning	WV	Performance assessment measure
OR	Teaching strategies emphasizing development of measurable objectives and diagnostic and prescriptive techniques	WY	Educational evaluation
TN	Measurement & evaluation		
WY	Research & educational evaluation		
II. States Requiring a Course on Tests & Measurement			
IL	(excluding Chicago)	MO	(Middle/junior high and secondary)
CT			
III. States Requiring a Course on Educational Psychology			
DE IL LA MD MI NJ NM OR SD WI		CT DE DC IL LA MD MI NM (optional) WI	
IV. States Listing No Requirement			
AK AR AZ CA CO FL GA HA ID IA KS KY ME MN MT NB NH NY NC ND OH OK PA RI SC TX UT VA WA WV		AK AR CA CO FL GA HA ID IA KS KY ME MN MS MT NB NV NH NJ NY NC ND OH OK PA RI SC SD TX UT VA WA	

Sources: Wollner, 1983; Burks, 1988

Adapted from Peter Wolmut, "On the Matter of Testing Misinformation" presented to the SRA, Inc., Invitational Conference, Phoenix, Arizona, 1988. Used by permission.

Then, to add to the problem, Gullickson & Hopkins (1987) have documented the fact that, even when such training is offered in Midwest teacher training programs, at least, the content coverage typically fails to supply teachers with the knowledge, skills and tools they will need to face the complex task demands of classroom assessment. Topics related to paper and pencil testing, standardized tests, statistical treatments of tests and technical psychometric issues dominate, while topics related to classroom decision making, assessment via observation, instructional questioning, grading practices, and the like are neglected.

As a result of this lack of relevant training, researchers across the land have documented relevant quality control problems in classroom assessment contexts. They cite problems with the assessment of thinking skills (Carter, 1984), poor quality paper and pencil tests (Fleming & Chambers, 1983), and vague to nonexistent performance criteria used in observation and judgment-based assessments (Stiggins & Bridgeford, 1985), among other problems.

The purpose of this study was to explore the issues related to teacher training in assessment as they manifest themselves in the Pacific Northwest. What do state laws require in the states of this region? Careful analyses were conducted of state laws in Alaska, Hawaii, Idaho, Oregon and Washington to find out. How frequently are teachers offered training in assessment? What exactly are they taught about assessment? Assessment course offerings in the most prominent teacher training programs in the region were examined to answer these important questions.

In short, the goal of this study was to determine teacher training priorities in assessment in the Northwest and to compare those findings with the results of a NWREL decade-long study of the task demands of classroom

assessment (Stiggins, Conklin, Bridgeford, Green & Brody, in press). Discrepancies between the real assessment needs of teachers and the needs addressed (or not addressed) in their training programs will suggest policies in need of reexamination, certification requirements in need of review, and teacher training curricula in need of revision.

CRITICAL CLASSROOM ASSESSMENT COMPETENCIES

The basis for our comparison between the real needs of teachers and those reflected in teacher training were eight competency areas derived from extensive NWREL observations of classroom assessment practices. Essentially, the task demands of classroom assessment require that teachers master the following skills and knowledge, at the very least:

Classroom decision making. A competent teacher understands how the assessment process fits into a wide variety of classroom decision making contexts. Assessment training should help teachers recognize and clearly differentiate among at least 12 different decision contexts which they will face in the classroom. Teachers assess in order to:

- diagnose the strengths and weaknesses of individual students,
- diagnose class or group needs,
- group students for instruction within a class,
- identify and select students who are in need of special services,
- communicate instructional objectives or achievement expectations,
- communicate social or interpersonal expectations,
- control student behavior and motivation,
- assign grades on report cards,
- evaluate the effectiveness of instructional treatments,

- provide test-taking experience,
- demonstrate personal responsibility for student learning, and,
- use the assessment process as a teaching strategy.

Each of these should be addressed in training from the perspective of how it relates to effective instruction, the value of assessment in each context, and the specific kinds of assessment information or results needed to make the decisions involved. This training will help the teacher begin to confront the extreme complexity of classroom assessment and give it order.

Then, having covered the full range of reasons why teachers assess, training can turn to the various ways other decision makers use assessment results, such as the principal, district administrators, the state department, colleges, etc. This will help the teacher see how classroom assessment fits into a bigger picture of school testing.

Assessment as an interpersonal activity. Teachers must become keenly aware of the role that academic assessment plays in the interpersonal environment of the classroom. Further, they must understand the critical role that interpersonal factors play in the academic assessments they conduct. They must know that assessment is never a purely academic process. Rather, it is a process that has interpersonal effects. For example, teachers must become aware of the fact that they are not the only decision makers who use classroom assessment results. Students use assessment results to make very important decisions about themselves and how they fit into the academic and social context of school. Assessment training should include a frank and specific treatment of assessment from the students point of view, focusing particularly on the personal dangers to the student of unsound assessment--especially in these times of extremely high drop out rates.

Providing a clear and stable target. As an overriding theme, classroom assessment training should establish for teachers the importance of developing a clear and enduring vision of the learning target. Without such a vision, they cannot develop sound assessments, sound instruction cannot be designed to help students hit the target, and it is very difficult for students to read and understand the teacher's expectations.

Teachers must know that targets can take many forms. They may be goals or objectives or textbook chapters. They may be test blueprints or performance assessment rating criteria. But whatever form they take, learning targets must contain one key ingredient: They must specify the kind(s) of thinking expected of students. Teachers must have a clear sense of the kind(s) of thinking they want students to demonstrate, and they must be capable of accurately assessing student performance according to those expectations using assessment methods that fit their particular classroom context. This requires that teachers become familiar with various taxonomies and frameworks of thinking skills, adopt one as a primary focus, learn to pose questions and posit exercises that tap those kinds of thinking, and learn to classify previously written exercises in terms of the kinds of thinking required to complete them.

Assessment training should include a specific and indepth treatment of issues related to the assessment of thinking.

Tools to assess achievement. Assessment training should also provide teachers with a working knowledge of when and how to design, develop, use and value a wide variety of methods for assessing student achievement. At least eight different methods should be addressed. Each teacher should learn the advantages and limitations of each assessment method, the common pitfalls to

their effective development and use in the classroom, and how to avoid those pitfalls. All methods should be considered equally important. None should be presented as more important or useful than another during teacher training. The judgments as to the utility of the various methods should be made by teachers, in terms of their own context and needs. The alternatives at their disposal are these:

- Teacher-developed paper and pencil tests and quizzes,
- Paper and pencil tests and quizzes that accompany textbooks and other published curriculum materials,
- Performance assessments or assessments that are based on teacher observations of and judgments about student products or demonstrated behaviors,
- Homework and seatwork assignments,
- Oral questions posed by the teacher and answered by the student during instruction,
- Standardized achievement tests,
- Results of group assessment activities, and
- Opinions of others about student achievement.

Assessment training should include a specific treatment of each of these possible sources of data on student achievement.

Tools to assess other traits. Achievement is only one of a variety of student characteristics teachers assess and use in their decision making. If we restrict assessment training to tactics for assessing achievement only, we train teachers inadequately and place students at risk. Teachers should learn how to design, develop, use and value a variety of methods for assessing

important affective and social characteristics of their students. Training should focus on at least six specific assessment methods:

- observing the behavior of individual students,
- observing group interactions,
- using paper and pencil questionnaires,
- conducting personal and group interviews,
- tapping the opinions of others about the traits of students, and
- reading student records.

Each teacher should learn the advantages and limitations of each method, the pitfalls to their appropriate use in the classroom and how to avoid those pitfalls. All methods should be considered equally important. None should be singled out as more valuable during the training process. Judgments as to the relative importance of the alternatives should be left to the teacher.

Providing feedback. The quality of an assessment is only as good as the communication value of its results. Assessments with high communication value provide results that can be understood and used by the decision maker. We already have established that students are high on the list of people who make decisions on the basis of classroom assessment results. If they are to act in their own best interest, they must receive feedback that has high communication value.

For this reason, teachers should learn the advantages and limitations of a variety of types of feedback, the pitfalls to their effective use in the classroom instruction context, and how to avoid those pitfalls. At least five forms of feedback should be the focus of specific training for teachers:

- oral and nonverbval feedback,
- feedback in the form of written comments,

- feedback in the form of performance ratings,
- feedback in the form of test scores, and
- feedback in the form of grades.

During the training process, all forms of feedback should be considered equally important. None should be singled out as more critical than the others.

The meaning of quality assessment. Teachers need to understand and be able to apply those assessment principles that will allow them to produce assessments that are of the highest possible quality, given the realities of the classroom context. Due to the constraints of time and the lack of available expertise, teachers cannot be asked to adhere to the same quality control standards as test publishers. Nor should they be taught to approach issues of quality control from the same technical or psychometric perspective as professionals in assessment. Rather, assessment training should help teachers maximize the quality of their assessments, even if they cannot quantitatively estimate that quality.

In other words, they must be able to apply at least four assessment quality criteria:

- Assessments must produce valid results by
  - measuring the intended outcomes or the target of instruction,
  - providing a representative sample of performance, and
  - producing results in a form that serves the intended purpose for assessment.
- Assessments must produce reliable results by
  - relying on assessment instruments and procedures that prevent extraneous factors from influencing student performance,
  - gathering a sample of performance of sufficient length to yield a stable index of performance, and
  - providing an objective or unbiased indicator of performance.

- Assessments must produce results that have the highest possible communication value for all users (as described above).

- Assessments must be efficient, i.e., produce maximum results for a minimum investment of resources by minimizing
  - difficulty of and time for development,
  - difficulty of and time for administration, and
  - difficulty of and time for scoring and recording.

Training should reveal to teachers how each of these criteria apply to the various types of assessment described above, i.e., paper and pencil, performance and oral assessment. In actual classroom practice, teachers will weigh these criteria differently in selecting an assessment method for a particular purpose. However, during training, all criteria should be considered equally important.

Focus on assessment policy. Teachers need to be aware of the role that school, district and even state policy can play in aiding or inhibiting the development of quality classroom assessment procedures. Often, testing and grading policies are written by educators who have little formal background in sound assessment practice. This can lead to the implementation of policies that can have a detrimental influence on quality. Teachers need to know how and where to look for pertinent assessment policies, how to evaluate those policies, and how to change policies that fail to promote sound classroom assessment.

The issue addressed in this study is: Are teachers trained in these key dimensions of classroom assessment in the Pacific Northwest?

METHODOLOGY

In order to determine the actual status of teacher training in assessment, we analyzed the following:

- Training requirements spelled out in state teacher certification standards in each state in the region,

- Course requirements in the most prominent teacher training institutions in each state in the region,
- Specific content covered in measurement courses offered at those teacher training institutions,
- Content of measurement textbooks used in those courses, and
- Test specifications of the National Teacher Examination, to determine the proportional representation of professional knowledge in assessment in the Core Battery, which teachers must pass to receive certification in some of the region's states.

The analysis of course requirements and content required that we identify a sample of teacher training institutions to be the focus of the study. In each state, institutions were ranked according to the number of bachelor degrees awarded to education majors. Starting from the top, colleges were placed in the sample until at least 75% of degrees granted in that state were accounted for. This resulted in a list of 14 institutions across the six states.

College catalogs for each institution were reviewed to determine curriculum requirements and optional offerings. Both baccalaureate and masters degree programs leading to elementary and secondary teaching certification were reviewed to find measurement courses.

Information on the specific content of measurement courses offered was obtained through direct contact with course instructors. Each institution supplied the name of the professor teaching the course, and we mailed a brief questionnaire to that person. Questions addressed whether the course was required or optional, what specific topics were covered, what text was used and how the instructor assessed the achievement of their student. In those instances where questionnaires were not returned, follow-up phone calls were

made to obtain the needed information. Of the original list of 13 courses identified as relevant, we succeeded in obtaining descriptions of nine. The remainder were unresponsive to repeated attempts to contact them by phone.

As mentioned, among the details requested from professors was information on the textbook(s) used in their measurement courses. While most relied on their own material to cover course content more than on texts, we were able to identify four textbooks (Anastasi, 1982; Cronbach, 1984; Gronlund, 1981; and Kubiszyn & Bolich, 1987) used extensively enough to justify an analysis of their content specifications.

Finally, to analyze the National Teacher Examination (NTE), we contacted the Educational Testing Service, publishers of the exam, to obtain a table of test specifications detailing the content covered on the NTE Core Battery.

RESULTS

State Standards

All NWREL region states place primary emphasis on completion of an "approved" baccalaureate program as a prerequisite to basic certification for classroom teaching, and some have additional requirements as well. Some also require a satisfactory score on the NTE. (See Table 2.) Only Oregon standards refer in any way to required training in assessment.

Because state certification standards generally leave the specific content of the academic program up to their colleges of education, it was also necessary to examine the college programs in some detail. To determine the expected content of such a college program in the states, a sample of teacher education programs was selected and analysis of their courses conducted.

Table 2
State Requirements for Basic Certificate

Alaska	Completion of accredited, state-approved program
Hawaii	Completion of accredited, state-approved program, with in-state programs developed in cooperation with the department of education; NTE required for employment
Idaho	Completion of accredited, state-approved program including psychological and methodological foundations of education and satisfactory score on the NTE
Montana	Completion of accredited, state-approved program and satisfactory score on the NTE
Oregon	Completion of accredited, state-approved program including preparation for competency in diagnostic and precriptive techniques
Washington	Completion of accredited, state-approved program

Program Requirements

The paragraphs which follow describe courses which are titled or cited by instructors as evaluation courses. It is important to note that there may be assessment content in other courses in many teacher training curricula. For example, introductory educational psychology often has a one to two week section on tests. Elementary and secondary methods courses may also have an evaluation unit. Methods courses are almost always required and educational psychology is required at about half the teacher training institutions studied. However, we did not study these segments due to their extreme shallowness. Evaluation is one of six or more topics covered in these educational psychology or methods courses. We also found that teachers in some programs, such as special education, may receive more measurement training than those in general education programs.

Alaska. Certification in Alaska requires completion of an accredited, approved baccalaureate program. The two key teacher training programs in the state are the University of Alaska's campuses at Anchorage and Fairbanks. At Anchorage, the undergraduate teacher education curriculum includes the specific requirement of Education 330, Diagnosis and Evaluation of Learning, this is not, however, primarily devoted to assessment in content. The M.Ed. degree program does not have an assessment-related requirement. At Fairbanks undergraduates must complete Education 332, Tests and Measurements and Education. The graduate program does not require any training in assessment.

Hawaii. Hawaii similarly states academic program completion as the requirement for certification and, in addition, passing an area of speciality test. Approval of educational programs is directly tied to "the dynamic and

changing needs of the Department," thus reflecting a close relationship between state department of education expectations and the teacher training institutions. For employment in the state the additional requirement of a satisfactory score on the NTE is imposed.

The University of Hawaii at Manoa is the key state teacher training institution. Undergraduates may take Tests and Measurement 416 in the educational psychology program. The graduate program directed toward classroom teaching (part of the curriculum and instruction program) does not state any assessment-related requirement.

Idaho. The Core Battery of the NTE is required for certification in Idaho, along with completion of an approved academic training program from an accredited institution. "Psychological and methodological foundations" of education are among the stated requirements for training programs. Boise State University, Idaho State University, and the University of Idaho account for most of the state's teaching degrees. There is no assessment-related course offered undergraduates in education at Boise State. Graduate students may take Individual Tests and Measurements, 505 and Testing and Grading, 569. At Idaho State, teacher trainees must take Motivation, Learning and Assessment, 323. The undergraduate/graduate course Measurement and Evaluation, 451 (only 2 credits) is also offered, though not required or recommended. Graduate students may elect Introduction to Educational and Psychological Measurements, 614. The University of Idaho does not require any assessment courses of its undergraduates.

Montana. Like Idaho, Montana specifies completion of an accredited, state-approved program and an acceptable score on the NTE as requirements for

certification. The key training institutions in the state are Eastern Montana College and the University of Montana. Eastern Montana College requires Student Evaluation and Guidance, 311 (4 credits) of its elementary and secondary trainees. The University of Montana specifies Educational Measurement, 452 (also 4 credits) as a necessary part of its undergraduate curriculum. At the graduate level no specific course requirements are stated.

Oregon. Oregon's state certification requirements explicitly states that applicants should demonstrate capability in "teaching strategies emphasizing development of measurable objectives and diagnostic and prescriptive techniques." A degree from an approved academic program is required. Oregon public institutions will shift to a fifth-year degree program in 1990. The state expects a masters program to provide teachers with competencies in four key areas, of which one is "Evaluate Pupil Achievement." Specifically, teachers should be able to: "(a) Select and use tests, observation, pupil interviews, and other formal and informal assessment procedures to determine the extent to which each pupil has achieved the objectives of the lesson and/or unit of instruction; (b) Grade and record pupils' progress, prepare anecdotal records, and report achievement to pupils and parents; (c) Summarise data on pupil achievement by quartiles of pupils in relationship to instructional objectives; (d) Use data on pupil achievement to refine curriculum objectives and to plan further instruction; and (e) Document teaching effectiveness through assembling and analyzing samples of pupils' work."

Oregon's three principal teacher training institutions are Oregon State University/Western Oregon State College, Portland State University, and the

University of Oregon. At Oregon State no assessment-related courses are required of undergraduates. An elementary/secondary graduate program in education is not currently offered. Portland State does not require any assessment-related courses of its undergraduates. The fifth year program may now be elected for standard certification at PSU and requires Measurement in Education, 424 of elementary students only, and also an educational research course which is required of secondary students as well and which may have assessment-related content. At the University of Oregon, undergraduate degrees leading to teaching certification are through academic subject departments; no assessment-related education courses are listed at the undergraduate level. A course Tests and Measurement in Educational Research, 417G (undergraduate and graduate credit) does not focus on classroom assessment-related issues. Masters degrees in elementary and secondary are offered at UO, but no specific course requirements are identified.

Washington. Washington requires a bachelor's degree from an accredited institution offering a state-approved program. Key degree-granting institutions in the state are Eastern Washington University, Pacific Lutheran University, and Washington State University. At Eastern Washington all undergraduate teaching degree candidates are required to take Evaluation in Education, 303 (5 credits). Three elective courses focusing on classroom instruction may also be partially relevant to assessment: Development of Higher Level Thinking Strategies, 362, Inquiry Strategies, 363, and Interactional Analysis, 364. The General Secondary Methods course, 425 has a major unit on evaluation. Graduate students are not required to take any assessment-related course. Pacific Lutheran requires no assessment-related

courses of its undergraduates. However, for their fifth year, standard certification program Evaluation, 467 is required for both elementary and secondary. At Washington State bachelor degree candidates are required to complete a 2-credit Evaluation of Learning course, 401 for elementary and 402 for secondary.

Course and Text Content

Table 3 summarizes the results of analysis of the assessment content of nine courses and four textbooks commonly used in these courses. Of the nine courses, just three (33%) are required of teacher trainees. The texts were all required in the courses, but most often were used partially, with supplements of local materials in some cases.

Table 3 analyzes the content of the courses and texts in terms of the eight essential assessment competencies identified in the research of Stiggins, et al. (in press). The table indicates the percent of the courses and texts which address these competencies in some way (Part I). Additionally, the table lists 11 other topics which were addressed in courses or texts, but which were not found by Stiggins, et al., to be among the essential assessment competencies of practicing classroom teachers (Part II). The "Comments" column of the table specifies which aspects of the various topics were the included in the courses and texts, where topics are known to have been only partially covered.

Content on essential competencies. Decision-making, while addressed by 44% of the courses and all the textbooks, received partial attention at best. The primary aspect of decision-making that was included was the distinction between norm- and criterion-referenced testing, excluding most of the 12 aspects of the decision-making competency identified by Stiggins, et al.

Table 3
Course and Text Content in Relation to Essential Competencies

	% of Courses	% of Texts	Comments
I. Essential Assessment Competencies			
1. Decision Making	44	100	NRT/CRT distinction typically emphasized
2. Assessment as Interpersonal Activity	33	25	Ethics and cultural bias only
3. Clear & Stable Achievement Target	44	50	Stating objectives only
4. Tools to Assess Achievement			
a. Paper and pencil tests	78	50	
b. Performance assessment	33	50	
c. Assignments	0	0	
d. Instructional questions	0	0	
e. Standardized tests	67	25	Selecting tests the key topic
f. Group assessment methods	0	0	
g. Opinions of others	0	0	
5. Tools to Assess Other Traits	44	25	
6. Providing Feedback	11	50	Grading only
7. Meaning of Quality			
a. Validity	100	100	Statistical treatment typically emphasized
b. Reliability	100	100	Statistical treatment typically emphasized
c. Utility	11	0	
d. Efficiency	0	0	
8. Assessment Policies	11	0	

Table 3 (Continued)

	% of Courses	% of Texts	Comments
II. Other Topics			
1. History of Testing	44	0	
2. Statistical Analysis	44	50	
3. Item Analysis	44	50	
4. Scaling	22	0	
5. IQ Testing	33	75	
6. Personality Assessment	22	50	
7. Professional Assessment	11	25	
8. Guidance Uses	11	0	
9. Reference Resources for Published Tests	11	0	
10. Assessment in Special Ed	0	25	
11. Microcomputer in Testing	0	25	

Assessment as an interpersonal activity was considered by only a minority of courses (33%) and texts (25%). And, in all cases, the topic was limited to considerations of the ethics of testing and issues of cultural bias.

Less than half (44%) of courses and just half the texts addressed the competency of setting clear and stable achievement targets. And, again, the topic was not covered in full; most content was restricted to the importance of stating objectives.

The tools to assess achievement were very unevenly covered. While most courses (78%) and half the texts covered paper and pencil tests and two-thirds of the courses and half the texts covered at least the selection of standardized tests, a minority of courses (33%) and just half of texts addressed performance assessment. Assignments, instructional questions, group assessment methods, and use of the opinions of others--all potentially valuable sources of achievement data for teachers--were not found in any course or textbook. The tools to assess other traits were also covered in just a minority of texts (44%) and texts (25%).

Providing feedback was covered in only 11% of courses and half of the texts. In all cases, the subtopic addressed was grading. Thus, the majority of assessment courses and texts did not assist teachers with training to develop sound grading practices or the use of other forms of classroom assessment feedback.

The meaning of quality, like tools for assessing achievement, was unevenly covered. The subtopics of assessment reliability and validity were the only two areas of competence that were covered by all courses and texts. By contrast, just one (11%) of the courses and none of the texts addressed assessment utility and no course or text considered assessment efficiency.

Assessment policies were also rarely addressed, finding a place in just one course, but in none of the texts.

Other content. Courses and texts also pursued content that is not included among the essential competencies for the classroom teacher. While not addressed in textbooks, 44% of the course instructors gave time to the study of the history of testing.

Technical aspects of testing were commonly found in both courses and texts. Statistical analysis and item analysis were offered in 44% of the courses and 50% of the texts. Scaling was taught in 22% of the courses, although not included in the texts.

IQ testing was commonly included in courses (33%) and texts (75%). Personality assessment was included somewhat less frequently, but still commonly, in 22% of courses and 50% of texts. Professional assessment was addressed by one course and one of the four texts.

Other topics that were found in courses, but not in texts, were uses of assessments in student guidance (11%) and reference resources of published tests (11%). Two topics not addressed in the general teacher education courses considered here, but included in the courses' texts were assessment for special education (25%) and uses of microcomputers in testing (25%).

Modelling assessment in measurement courses. The assessments used by instructors in these courses also serve to indicate to teacher trainees what is important to assess and how to assess it. In the nine measurement courses analyzed here, all but one instructor relied on paper and pencil examinations as their measures of student achievement. Some instructors' assessments required that students apply course concepts in projects or papers. These

assignments generally reflected course emphases on more technical aspects of testing. Among these were three courses requiring students to construct a paper and pencil test, two requiring a test analysis project, and three requiring a statistical analysis project. Research and short "problem" papers also appear to address similar topics, for example, performing an item analysis or defining reliability or validity. One course, by contrast, emphasized applications of course concepts to the classroom setting, requiring students to write short responses to constructed problems typical of those that would arise in testing and grading students.

National Teacher Examination. The NTE Core Battery was found to place little emphasis on assessment competence in the classroom. Of the 280 objective test items in the battery, approximately seven, or about 2.5%, address this topic.

CONCLUSIONS

Teachers can spend between a quarter and third of their available professional time or more involved in assessment-related activities. They are not being trained to meet the task demands created by this dimension of their jobs.

State requirements for training in assessment in the Northwest Region are nonexistent for all practical purposes. States rely on teacher training programs and the NTE to set the training and certification standards in assessment. As Wolmut (1988) has pointed out, our region mirrors the nation in this regard.

Teacher training institutions are not maintaining assessment training standards. A vast majority require no training. This too reflects priorities across the nation (Schafer & Lissitz, 1987).

Neither is the NTE enforcing a very high standard of preparation in classroom assessment. Its coverage must be considered shallow at best.

Looking within the few measurement courses offered, the content does not reflect the real training needs of teachers. Criticial assessment topics reflecting the knowledge and skills teachers need if they are to be able to do their jobs confidently and competently are being ignored in favor of other topics that simply are not relevant to the teacher or the day to day functioning of the classroom. The same is true of at least some of the textbooks used in these introductory measurement courses. And, even when important topics are covered, they are far too narrowly defined.

It is most instructive to analyze the assessment methods these instructors model in their assessments of the achievement of their students. Paper and pencil testing methods are taught and modeled. Thus, these instructors are consistent in their practices. But the problem is that classroom assessment includes far more.

The implications are clear. The assessment demands teachers face in the classroom on a day to day basis are great indeed. They are offered little or no professional preparation to meet those demands. They need and want better training in this arena. More stringent certification requirements in assessment can force teacher training institutions and certification test publishers to expand their training and assessment priorities. If the training programs respond with courses that are sensitive to the real demands teachers face, both the quality of the teachers we produce and the subsequent quality of the educational experiences provided by those teachers will improve markedly.

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